Remarks

Remarks Regarding Amendments to the Specification

1. In paragraph [0006] on page 1, the reference to canceled claim 11 is replaced by a reference to claim 14 to restore proper form.

2. It is requested that the formatting of paragraph [0004] be changed to a section heading.

Remarks Regarding Amendments to the Claims

3. Claim 11 is canceled and re-introduced as new claim 14 to restore proper form after being objected to in the Final Office Action.

Remarks Regarding Claim Rejections under 35 U.S.C. 103(a)

4. The Final Office Action rejects claims 1, 3-12 under 35 U.S.C. 103(a) as being unpatentable over Thomsen et al. (USPN 5,987,246) in view of Simonyi (USPN 5,790,863). Applicant traverses the rejections. Since claim 11 now appears as claim 14, claims 1, 3-10, 12-14 remain pending.

5. A proper rejection under 35 U.S.C. 103(a) requires that the prior art references must teach or suggest all the claim limitations. See MPEP 706.02(j). Thomsen et al. in view of Simonyi does not disclose or suggest at least one feature recited in claims 1, 3-10, 12-14.

6. Independent claim 1 is directed to a method which combines

    a) modeling a hierarchical data structure by input means with

    b) dynamically computing parts of such data structure through functional expressions employing the use of dynamic binding.

    Thomsen et al. in view of Simonyi neither discloses nor suggests the feature of an "expression being able to contain a reference using dynamic binding to refer to at least one other element" as recited in claim 1.

An expression according to Thomsen could only contain references to other elements being statically bound (hard-wired) by connecting function inputs to outputs through graphical user interactions (see Thomsen, 2:47 – 50). Such references (inputs) cannot change (connect to a different output element) once execution begins (at "run time"). As a result, Thomsen provides no mechanism for functional expressions to automatically respond to the insertion or deletion of elements (at "run time").

For an example, given an order entry system as described in Fig. 3, consider the possible addition of an "Item 4" or a deletion of "Item 3". Based on Thomsen's disclosure, it would be impossible to construct an expression as depicted in Fig. 3, 11, which could compute the total sum of amounts from a set of order items where that set of order items would grow or shrink dynamically as new items are added to or deleted from the hierarchy, without requiring the user to change such expression on each occurrence.

Simonyi does not remedy that deficiency.

Unlike Thomsen in view of Simonyi, the preferred embodiment with the features of claim 1 expressly enables expressions to automatically respond to the insertion or deletion of elements (at "run time"). See 1:[0014], 1:[0016], 3:[0055] – [0056].

The Final Office Action does not address the above feature of claim 1. However, had it been considered, there would clearly be no motivation in view of Thomsen et al. combined with Simonyi to include such a feature.

In both Thomsen and Simonyi, the subject of modeling is not a dynamic data structure as recited in claim 1, but a program structure. As the latter is typically static by nature (does not change at "run time"), and references would point to elements of that static program structure, the targets of said references do not change dynamically, so there is no motivation to contemplate using dynamic binding in such references. Instead, when compared to conventional static binding in that context, the difficulties of implementing dynamic binding and performance considerations would advise against the use of dynamic binding.